

REMARKS/ARGUMENTS

Reconsideration and allowance in view of the foregoing amendment and the following remarks are respectfully requested.

Claims 1-7 and 14-17 are now pending. Non-elected claims 8-13 have been cancelled above without prejudice to advance prosecution. Applicant reserves the right to file a divisional application directed to the subject matter of those claims.

Claims 1 to 7 and 14 to 17 were rejected under 35 USC 102(e) as being anticipated by US 5,989,754 to Chen et al.

Anticipation under Section 102 of the Patent Act requires that a prior art reference disclose every claim element of the claimed invention. See, e.g., Orthokinetics, Inc. v. Safety Travel Chairs, Inc., 806 F.2d 1565, 1574 (Fed. Cir. 1986). While other references may be used to interpret an allegedly anticipating reference, anticipation must be found in a single reference. See, e.g., Studiengesellschaft Kohle, G.m.b.H. v. Dart Indus., Inc., 726 F.2d 724, 726-27 (Fed. Cir. 1984). The absence of any element of the claim from the cited reference negates anticipation. See, e.g., Structural Rubber Prods. Co. v. Park Rubber Co., 749 F.2d 707, 715 (Fed. Cir. 1984). Anticipation is not shown even if the differences between the claims and the prior art reference are insubstantial and the missing elements could be supplied by the knowledge of one skilled in the art. See, e.g., Structural Rubber Prods., 749 F.2d at 716-17.

Claim 1 has been further amended herein above to define the method steps which further characterize and distinguish the present invention from the method disclosed in Chen et al. It is to be particularly noted and emphasized that the claims presently pending in this application are method claims, not claims to a photomask, and thus, for Chen et al to anticipate the currently pending claims, the method steps defined in the method claims must be found in Chen et al.

Firstly it is important to note that the present invention is directed to a method of producing a mask for use in producing a resist pattern for etching of a **printed circuit**. Chen is concerned with mask production, but the mask is to be used in a lithographic process for production of features within a semi-conductor chip, not for the production of a printed circuit. A printed circuit, as is well known, consists of a conductive layer (usually copper) on an insulating substrate. The circuit is formed by etching away of the copper to leave conductive lines on top of the substrate. Lithographic production of semi-conductor devices, however, involves deposition and doping of substances onto and into a semi-conductor substrate. This is clear from column 1, lines 17 to 22 of Chen:

"Photolithography is one of the most important techniques utilised in the manufacture of today's semi-conductor integrated circuits. Most semi-conductor device structures are defined by this process. In fabricating a transistor, for example, both of the thin film patterns and the impurity diffusion regions are defined by a photolithography process."

The lithographic production of components within a semi-conductor chip is not the same as the production of a printed circuit. Claim 1 as amended is limited to a method of producing a printed circuit board mask for producing a resist pattern for etching of a printed circuit. Chen does not disclose a method for producing a printed circuit board mask. Instead Chen discloses a method of producing a lithography mask. Thus Chen does not disclose to the person skilled in the art a method of producing a printed circuit board mask.

Claim 1 as amended also now requires the method to include the step of defining a desired pattern of conductor elements to be formed by etching away of conductive regions from a substrate carrying a conductive layer on its surface. This step is not present in Chen et al. In Chen there is no step of defining a desired pattern in a conductive layer formed on a substrate which is then etched away. Instead in Chen, which is involved with semi-conductor production, the mask defines resist regions which will then be areas that are not doped or deposited upon in the normal semi-conductor device production method. Thus, in defining the photomask of Chen, the method does

not include the step of defining a desired pattern of conductor elements to be formed by etching away of conductive regions.

Claim 1 as amended also requires the step of defining the mask with reference to the desired pattern of conductor elements, the mask comprising masking elements for producing a resist pattern to be formed on the conductive layer on the substrate to leave exposed regions of said conductive layer to be etched away. The method of producing the photomask of Chen does not include the step of defining masking elements which form a resist pattern that leaves exposed areas of a conductive layer to be etched away. As discussed above, there is no etching away of conductive regions in Chen et al. Thus the method of production of the mask of Chen does not include this step required explicitly in claim 1.

Even further, although Figure 6 of Chen includes a "clear scribe line 32" which appears to have a constant width, this scribe line does not delineate individual conductor elements in the desired printed circuit pattern. It is important to understand that the chrome films 50A, 50B, 50C and 50D in Figure 6 of Chen are simply optical masking elements. They are used to mask a resist so that the resist can then be etched to form a desired resist pattern. The desired resist pattern then is used in the doping and deposition steps. Thus, the areas 50A, B, C and D do not correspond to "individual conductor elements to be formed by etching away of conductive material."

For all the reasons advanced above, it is respectfully submitted that claim 1 is not anticipated by nor obvious from Chen. The claims dependent from claim 1 are submitted to be patentable for the same reasons.

Claim 14, as amended hereinabove, is directed to a method of producing a printed circuit and now specifically includes the step of "etching away said exposed regions of conductor". Given that Chen is concerned with a different technology (semiconductor production) it does not include the step of etching away exposed regions of conductor, and Chen does not disclose to the skilled person a method of producing a printed circuit.

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Appl. No. 10/019,686

August 26, 2004

It is further respectfully noted that a problem solved by the present invention is that of varying etch rates depending on the local density of conductor in the process of etching away conductive regions. Because Chen et al is concerned with lithographic semi-conductor manufacture, this problem does not arise. There is no etching away of conductive elements to form a circuit. Thus, Chen et al does not teach the skilled person anything about the problem addressed by the present invention. In particular, Chen et al does not disclose a printed circuit pattern having individual conductor elements, and does not teach the provision of a constant width etch band around them.

Given the clear differences between claim 14 and the disclosure of Chen et al, it is respectfully submitted that claim 14 and the claims dependent thereon are not anticipated by nor obvious from Chen.

In view of the foregoing, reconsideration and withdrawal of the Examiner's rejection based on Chen et al is submitted to be in order.

All objections and rejections having been addressed, it is respectfully submitted that the present application is in condition for allowance and an early Notice to that effect is earnestly solicited.

Respectfully submitted,

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